Abstract: Smartphone sales are at an all-time high with the ever increasing use of smartphones, we have access to data like never before. But with information that vast, we often get suffocated by the images that clutter our devices, making it that much harder to get to the pictures that matter to us. With the power of Machine Learning and image processing, this Text Image Elimination App will free your device from all the clutter and make your life easier. The application removes the images they may not want on their phone. Images containing text will be processed and the text extracted from the images will be compared to a list of texts given by the user and if there is any instance of the text in the image it will automatically be deleted. This paper proposes an efficient android application where the user can optimize the storage space by eliminating the images of his interest based on text matching without directly going in to the directory.

Keywords : Android, text image.

I. INTRODUCTION

Text Image Elimination is an Android application developed in Android Studio. This app searches the images in your phone and deletes the images containing text which is blacklisted. By using this application users can save storage in their phone and prevent spam images that are forwarded in WhatsApp groups. This paper focuses to remove the unnecessary images such as reposts in major WhatsApp groups containing unwanted text and optimize the storage space in the device.

II. PROPOSED FRAMEWORK

This journal uses double-blind review process, which means that both the reviewer(s) and author(s) identities concealed from the reviewers, and vice versa, throughout the review process. All submitted manuscripts are reviewed by three reviewer one from India and rest two from overseas. There should be proper comments of the reviewers for the purpose of acceptance/ rejection. There should be minimum 01 to 02 week time window for it.

III. APPROACH

Optical Character Recognition or OCR is a conversion tool used to convert images containing typed text, written or printed text into computer encoded text. One of the earliest addressed computer vision tasks is optical character recognition. Matrix matching is one of the techniques of OCR that involves comparing an image to a stored glyph, pixel-by-pixel. Once the input glyph is correctly isolated from the rest of the image, it is compared with all the stored glyphs and matched with the one that it shares most similarities with. But the limitation with this technique is that it works
best with typewritten text and does not work well when new fonts are encountered. Another method of OCR is Feature extraction technique, it decomposes glyphs into features like lines, closed loops, line intersections and line direction.

This method of feature extraction reduces the dimensions for the representation of the glyphs and makes the recognition process computationally efficient compared to the matrix matching method. These feature set is compared with a vector like representation of each character having its own feature set, which reduces to a few glyph prototypes which are predefined. General techniques of feature detection in computer vision are are used in this type of OCR, which is also commonly found in intelligent handwriting recognition as well as in the most modern OCR software. Nearest neighbor classifiers such as the k-nearest neighbors algorithm is used to compare the extracted feature set from the image with stored glyph for each character’s features that chooses the nearest match with the input text.

The string that is extracted is then matched with the given text. If the extracted text matches with any of the text given, the application creates a file with the image path. Once this file is created it deletes the image in that path.

In computing, we use a bitmap for mapping from any given domain to bits like a range of integers. It is also called a bit array. The pix-map refers to a map of pixels, where each pixel from the map can store colors and hence use more than a single bit per pixel. In such a case the pixmap stores more than one bit per pixel. While the term bitmap indicates one bit per pixel, the term pixmap is used in the cases where images can have multiple bits per pixel. The process is as shown in Fig2.

IV. RESULTS

This application is developed in Android Studio using Firebase connectivity. Firebase allows prebuilt models and features that programmers can use to implement into their application.

As shown in the Fig 3 when the application is launched for the first time, it prompts the user to allow the access to the device storage. If the user permits then application can access the images in the device storage.

After giving permission, user needs to specify the text for the images, which he wants to eliminate. As referred in Fig 4, need to type the text on the images.
Then the images containing the blacklisted words are searched from the device and deleted.

Fig 5: Phone Gallery before Running the Application

The model picks all images of specified text from the device as shown in Fig 5.

Fig 6: Phone Gallery after Running the Application

After running the application, specified text images are eliminated and rest are retained in the gallery as shown in Fig 6.

V. CONCLUSION

The application is developed for mobile platform on Android devices. There are a few other image removal applications, but they are web application based. This Text Removal Application is the first one to be developed for Android platform. The application can be very helpful for automating everyday process of selecting images and deleting manually and can save a lot of time for the users who frequently get unnecessary images. It works locally on the device, so the application does not require any internet connection for it to work. The locality of the application also ensures that the data is secure and is not abused. The application runs very efficiently and quickly. It has no working bugs and is very efficient. There are no such existing apps on the Google Play Store.

REFERENCES

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